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REMARKS

The above amendments and the below remarks are responsive to the Office Action, dated June 28, 2005, entered in the above referenced pending application. The pending claims are 12-16. Each of the Examiner's rejections is addressed separately below.

Information Disclosure Statement

A supplemental Information Disclosure Statement is being filed concurrently herewith to include the month and year of the publications indicated by the Examiner as not being considered.

Rejections under 35 U.S.C. § 103

Claims 12-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0182441 ("*Lamansky*") in view of the Dedeian et al. article *Inorganic Chemistry*, Vol. 30, 1991, 1685-1687 ("*Dedeian*") and WO 00/70655 ("*Baldo*"). Applicants respectfully traverse this rejection.

Pending Claim 12

Claim 12 is a compound claim, from which Claims 13-16, device claims, depend.

Claims 12 recites a compound which is an iridium complex having two specific substituted phenylpyridine ligands, a triphenylphosphine ligand and a chloro ligand. The phenylpyridine has a fluorine in the 4-position of the phenyl ring and a trifluoromethyl group in the 5-position of the pyridine ring. None of the references relied on by the Examiner, when read alone or together, teach or suggest the subject matter of Claim 12.

In particular, as indicated by the Examiner, *Lamansky* discloses iridium metal complexes having 2-phenylpyridine ligands. In Figure 5(a) of *Lamansky* a generic phenylpyridine ligand is shown having an R₁ substituent on the phenyl ring and R₂ on the pyridine ring. In Figure 5(b) of *Lamansky* a generic phenylpyridine ligand is shown having a methyl group in the 4-position on the phenyl ring as well as an R₂ substituent on the phenyl ring, and an R₁ substituent on the pyridine ring. However, R₁ and R₂ are not defined. The only examples of substituted phenylpyridine ligands are 4,6-difluorophenylpyridine and 4,5-difluorophenylpyridine, in which the fluoro substituents are on the phenyl ring. This is to be contrasted with Claim 12 directed to a compound with the "F" on the phenyl ring and CF₃ on the pyridine ring.

The deficiencies of *Lamansky* are not met by *Dedeian*. The Examiner has pointed to *Dedeian* to provide the substituents. *Dedeian* discloses iridium complexes having three substituted 2-phenylpyridine ligands ("tris complexes") as strong photoreducing agents. The complexes of *Dedeian* have substituents only on the phenyl group in the phenylpyridine

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ligand, *i.e.*, 4-fluorophenyl and 4-trifluoromethylphenyl. See Table I at the top of page 1686. There is no suggestion in either reference of a trifluoromethyl substituent on the pyridine ring. The Examiner has further pointed out that the *Lamansky* and *Dedeian* references share a common author. Applicants submit that because of this, the *Lamansky* reference teaches away from trifluoromethyl substituents. Since the inventors in *Lamansky* were aware of trifluoromethyl as a substituent, they surely would have mentioned it if it were suitable for the phenylpyridine ligands of *Lamansky*. The failure to list fluoroalkyl or trifluoromethyl as a substituent is an indication against its use.

The addition of the teachings of the *Baldo* reference does not overcome the deficiency. *Baldo* discloses tris complexes with phenylpyridine ligands and teaches that substituents on either ring can be alkyl or aryl. No substituted ligands are exemplified. Based on the combined teachings of *Lamansky*, *Dedeian*, and *Baldo*, and absent Applicants' teaching, one of ordinary skill in the art would not know to use a trifluoromethyl substituent in the 5-position of the pyridine ring of a phenylpyridine ligand and arrive at the compound recited in Claim 12.

Applicants respectfully request that the rejection be withdrawn with respect to Claim 12.

Pending Claim 13

Claims 13 recites a compound which is an iridium complex having two specific substituted phenylpyridine ligands, a phosphine ligand and a chloro ligand. The phenylpyridine has a fluorine in the 4-position of the phenyl ring and a trifluoromethyl group in the 5-position of the pyridine ring. The phosphine ligand is tris[3,5-bis(trifluoromethyl)phenyl]phosphine.

The references cited, taken individually or collectively, do not teach or suggest the substituted phenylpyridine ligand of Applicants' Claim 13 for all the reasons listed above with respect to Claim 12.

Furthermore, there is no teaching or suggestion in any of the references of the specific phosphine ligand in the compound of Claim 13. *Lamansky* discloses triphenylphosphine as a potential ligand and indicates that it is possibly substituted in Figure 6b. However, there is no discussion at all about what substituents may be used. *Dedeian* and *Baldo* disclose only tris complexes and are silent as to the nature or effect of any additional ligands.

The Examiner has stated that it "would have been obvious ... to locate the substituents of *Lamansky* at each specific location on the phenylpyridine ligand and on the triphenylphosphine ligand, in order to beneficially affect the emissive properties of the Ir complex, as taught to be beneficial in *Baldo*, thereby giving a wider range of colors." Applicants respectfully disagree with this statement. First, *Lamansky*, at most, teaches fluoro and methyl substituents, and then, only on certain ligands. There is no teaching of these substituents on a triphenylphosphine ligand. And there is no teaching of trifluoromethyl

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substituents. Second, the teaching of *Baldo* on pages 14 and 15, refers to the different properties of tris complexes with different ligands, *i.e.*, phenylpyridine, phenylpyrimidine, and bipyridine ligands. There is no suggestion of other ligands, and certainly no suggestion of other substituted ligands, specifically, the "F" on the phenyl ring and CF_3 on the pyridine ring as required by Claim 13.

Based on the combined teachings of *Lamansky*, *Dedeian*, and *Baldo*, and absent Applicants' teaching, one of ordinary skill in the art would not arrive at an iridium complex with the specific phenylpyridine ligands and substituted triphenylphosphine ligands of the compound recited in Claim 13.

Applicants respectfully request that the rejection be withdrawn with respect to Claim 13.

Pending Claims 14-16


With respect to Claims 14-16, Applicants respectfully submit that electronic devices comprising the compounds of Claims 12 and 13 are not taught or suggested by *Lamansky*, *Dedeian*, and *Baldo*, for all the reasons enumerated above. The compounds are novel and nonobvious and as are the devices using such novel and nonobvious compounds.

Applicants respectfully request that the rejection be withdrawn with respect to Claims 14-16.

Conclusion

In view of the foregoing amendments and remarks, Applicants submit that the above referenced pending application is in condition for allowance. A Notice of Allowance for Claims 12-16 is earnestly solicited.

Respectfully submitted,


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